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1. Document ID: US 6757319 B1

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L7: Entry 1 of 11

File: USPT

Jun 29, 2004

US-PAT-NO: 6757319

DOCUMENT-IDENTIFIER: US 6757319 B1

TITLE: Closed loop power control for common downlink transport channels

DATE-ISSUED: June 29, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
<u>Parسا</u> ; Kourosh	Riverside	CT		
Kanterakis; Emmanuel	North Brunswick	NJ		

US-CL-CURRENT: 375/141; 370/441

Full	Title	Citation	Front	Review	Classification	Date	Reference	Document	Image	Claims	KWIC	Drawn B
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2. Document ID: US 6717975 B2

L7: Entry 2 of 11

File: USPT

Apr 6, 2004

US-PAT-NO: 6717975

DOCUMENT-IDENTIFIER: US 6717975 B2

TITLE: Common packet channel

DATE-ISSUED: April 6, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kanterakis; Emmanuel	North Brunswick	NJ		
<u>Parسا</u> ; Kourosh	Riverside	CT		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE	CODE
Golden Bridge Technology, Inc.	West Long Branch	NJ				02

APPL-NO: 09/ 941756 [PALM]

h e b b g e e e f e g ef b e

DATE FILED: August 30, 2001

PARENT-CASE:

CROSS-REFERENCE TO RELATED APPLICATION This application is a Continuation of application Ser. No. 09/679,367 filed Oct. 5, 2000, now U.S. Pat. No. 6,301,286, which is a Continuation of application Ser. No. 09/273,508 filed Mar. 22, 1999, now U.S. Pat. No. 6,169,759, issued Jan. 2, 2001, entitled "COMMON PACKET CHANNEL," the disclosure of which is incorporated herein entirely by reference.

INT-CL: [07] H04 B 1/69, H04 B 7/216, H04 L 12/56

US-CL-ISSUED: 375/141; 370/342, 370/335, 370/394  
 US-CL-CURRENT: 375/141; 370/335, 370/342, 370/394

FIELD-OF-SEARCH: 375/130, 375/140, 375/141, 375/145, 375/146, 375/147, 370/320, 370/342, 370/335, 370/394, 370/441, 370/445

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>4689786</u>	August 1987	Sidhu et al.	370/255
<u>5103459</u>	April 1992	Gilhousen et al.	
<u>5280472</u>	January 1994	Gilhousen et al.	370/335
<u>5305308</u>	April 1994	English et al.	370/335
<u>5329550</u>	July 1994	Rousseau et al.	375/219
<u>5384777</u>	January 1995	Ahmadi et al.	370/337
<u>5461639</u>	October 1995	Wheatley, III et al.	370/342
<u>5491837</u>	February 1996	Haartsen	455/437
<u>5535210</u>	July 1996	Smolinske et al.	370/461
<u>5537397</u>	July 1996	Abramson	370/441
<u>5544196</u>	August 1996	Tiedemann, Jr. et al.	375/145
<u>5553210</u>	September 1996	Narayanaswami	
<u>5600754</u>	February 1997	Gardner et al.	704/221
<u>5673259</u>	September 1997	Quick, Jr.	370/342
<u>5802465</u>	September 1998	Hamalainen et al.	455/403
<u>5809430</u>	September 1998	D'Amico	455/525
<u>5825835</u>	October 1998	Kingston et al.	375/367
<u>5841768</u>	November 1998	Ozluturk et al.	370/335
<u>5850602</u>	December 1998	Tisdale et al.	455/430
<u>5875182</u>	February 1999	Hatzipapafotiou	370/321
<u>5893036</u>	April 1999	Trandai et al.	455/522
<u>5894472</u>	April 1999	de Seze	370/337
<u>5103459</u>	July 1999	Gilhousen et al.	
<u>5933777</u>	August 1999	Rahman	370/335
<u>5943327</u>	August 1999	Mademann	370/329
<u>5953369</u>	September 1999	Suzuki	375/148
<u>5982763</u>	November 1999	Sato	370/342
<u>5991308</u>	November 1999	Fuhrmann et al.	370/395.53

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<u>6009089</u>	December 1999	Huang et al.	370/342
<u>6026081</u>	February 2000	Hamabe	370/335
<u>6031832</u>	February 2000	Turina	370/348
<u>6038223</u>	March 2000	Hansson et al.	370/329
<u>6038250</u>	March 2000	Shou et al.	375/143
<u>6011788</u>	April 2000	Hurst et al.	370/335
<u>6091757</u>	July 2000	Cudak et al.	375/130
<u>6141337</u>	October 2000	Uta et al.	370/350
<u>6141373</u>	October 2000	Scott	375/150
<u>6144841</u>	November 2000	Feeny	455/69
<u>6163533</u>	December 2000	Esmailzadeh et al.	370/342
<u>6169759</u>	January 2001	Kanterakis et al.	
<u>6292471</u>	September 2001	Cao et al.	370/252
<u>6310868</u>	October 2001	Uebayashi et al.	370/335
<u>6442153</u>	August 2002	Dahlman et al.	370/342
<u>6480525</u>	November 2002	Parsa et al.	375/141
<u>6594600</u>	July 2003	Arnoul et al.	

## FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
0 731 578	September 1996	EP	
0731578	September 1996	EP	
0773636	May 1997	EP	
0 773 636	May 1997	EP	
93/18601	September 1993	WO	

## OTHER PUBLICATIONS

Jongray Na "Error performance analysis of data based fast channel estimation for CDMA uplink with staggered burst pilot," 1997, IEEE, pp 2177-2181.\*  
 Dae -Ki Hong et al., "Pilot to data channel power allocation for PCA-DS/CDMA with interference canceler", 2001, IEEE, pp 331-333.\*  
 Sofiene Affes et al., "Pilot-assisted STAR for increasing capacity and coverage on the downlink of wideband CDMA networks," 2001, IEEE, pp 310-313.\*  
 John S. Thompson et al., "Pilot power allocation for CDMA system with antenna arrays," 2000, IEEE, pp 424-428.\*  
 Dong In Kim et al., "Random Assignment/Transmitter Oriented Code Scheme for Centralized DS/SSMA Packet Radio Networks," IEEE Journal on Selected Area in Communication, vol. 14, No. 8. Oct. 1996, pp. 1560-1568.  
 Riaz Esmalizadeh, "A New Slotted Aloha Based Random Access Method For CDMA Systems," IEEE 1997, pp. 43-47.

ART-UNIT: 2631

PRIMARY-EXAMINER: Bocure; Tesfaldet

ATTY-AGENT-FIRM: McDermott, Will &amp; Emery

ABSTRACT:

h e b b g e e e f e g ef b e

An improvement to a code-division-multiple-access (CDMA) system employing spread-spectrum modulation, with the CDMA system having a base station (BS) and a plurality of remote stations. The base station has a BS-spread-spectrum transmitter and a BS-spread-spectrum receiver. A remote station has an RS-spread-spectrum transmitter and an RS-spread-spectrum receiver. The BS transmitter transmits a broadcast common-synchronization channel, which includes a frame-timing signal. The broadcast common-synchronization channel has a common chip-sequence signal, which is common to the plurality of remote stations. In response to the RS-spread-spectrum receiver receiving the broadcast common-synchronization channel, and determining frame timing from the frame-timing signal, an RS-spread-spectrum transmitter transmits an access-burst signal. The BS-spread-spectrum transmitter, responsive to the BS-spread-spectrum receiver receiving the access-burst signal, transmits an acknowledgment signal. In response to the first RS-spread-spectrum receiver receiving the acknowledgment signal, the first RS-spread-spectrum transmitter transmits a spread-spectrum signal having data.

19 Claims, 11 Drawing figures

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Document](#) | [Image](#) | [PDF](#) | [Text](#) | [Claims](#) | [KDDC](#) | [Drawings](#)

3. Document ID: **US 6643318 B1**

L7: Entry 3 of 11

File: USPT

Nov 4, 2003

US-PAT-NO: 6643318

DOCUMENT-IDENTIFIER: US 6643318 B1

TITLE: Hybrid DSMA/CDMA (digital sense multiple access/code division multiple access) method with collision resolution for packet communications

DATE-ISSUED: November 4, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
<u>Parsa</u> ; Kourosh	Riverside	CT		
Kanterakis; Emmanuel	North Brunswick	NJ		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE	CODE
Golden Bridge Technology Incorporated	West Long Branch	NJ			02	

APPL-NO: 09/ 695720 [PALM]

DATE FILED: October 25, 2000

PARENT-CASE:

RELATED APPLICATION This application claims the benefit of U.S. Provisional Application No. 60/161,443, entitled "HYBRID DSMA/CDMA (DIGITAL SENSE MULTIPLE ACCESS/CODE DIVISION MULTIPLE ACCESS) METHOD WITH COLLISION RESOLUTION FOR PACKET COMMUNICATIONS" filed on Oct. 26, 1999, the disclosure of which is entirely incorporated herein by reference.

INT-CL: [07] H04 B 1/69, H04 B 7/216

h e b b g e e e f

e g ef b e

US-CL-ISSUED: 375/141; 370/335  
 US-CL-CURRENT: 375/141; 370/335

FIELD-OF-SEARCH: 375/130, 375/141, 375/146, 375/147, 370/342, 370/320, 370/441,  
 370/329, 370/335, 455/509

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>5103459</u>	April 1992	Gilhousen et al.	
<u>5280472</u>	January 1994	Gilhousen et al.	
<u>5384777</u>	January 1995	Ahmadi et al.	
<u>5461639</u>	October 1995	Wheatley, III et al.	
<u>5537397</u>	July 1996	Abramson	
<u>5544196</u>	August 1996	Tiedemann, Jr. et al.	
<u>5673259</u>	September 1997	Quick, Jr.	
<u>5802465</u>	September 1998	Hamalainen et al.	
<u>5825835</u>	October 1998	Kingston et al.	
<u>5841768</u>	November 1998	Ozluturk et al.	
<u>5850602</u>	December 1998	Tisdale et al.	
<u>5875182</u>	February 1999	Hatzipapafotiou	
<u>5893036</u>	April 1999	Trandai et al.	
<u>5894472</u>	April 1999	de Seze	
<u>5933777</u>	August 1999	Rahman	
<u>5943327</u>	August 1999	Mademann	
<u>5953369</u>	September 1999	Suzuki	
<u>5982763</u>	November 1999	Sato	
<u>5991308</u>	November 1999	Fuhrmann et al.	
<u>6009089</u>	December 1999	Huang et al.	
<u>6011788</u>	January 2000	Hurst et al.	
<u>6026081</u>	February 2000	Hamabe	
<u>6031832</u>	February 2000	Turina	
<u>6038223</u>	March 2000	Hansson et al.	
<u>6038250</u>	March 2000	Shou et al.	
<u>6041228</u>	March 2000	Niska et al.	455/419
<u>6163533</u>	December 2000	Esmailzadeh et al.	370/342
<u>6169759</u>	January 2001	Kanterakis et al.	
<u>6301286</u>	October 2001	Kanterakis et al.	
<u>6389056</u>	May 2002	Kanterakis et al.	
<u>6480525</u>	November 2002	Parsa et al.	
<u>6507601</u>	January 2003	Parsa et al.	

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
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h e b b g e e e f e g ef b e

003499	January 2000	WO
008908	February 2000	WO
018172	March 2000	WO
022873	April 2000	WO
057591	September 2000	WO
057663	September 2000	WO

## OTHER PUBLICATIONS

"Start UMTS Services with 3G-GPRS:CPCH/FACH," Golden Bridge Technology, Innovations and Technologies, pp. 1-20 (Jun. 27, 2000).

The Common Packet Channel considered the 3.sup.rd Generation GPRS," System Engineering of Data Services in UMTS W-CDMA Systems," IST Mobile Communications Summit, Galway, Ireland, Oct. 1-4, 2000.

ART-UNIT: 2663

PRIMARY-EXAMINER: Bocure; Tesfaldet

ATTY-AGENT-FIRM: McDermott, Will & Emery

## ABSTRACT:

A hybrid DSMA-CR/CDMA methodology provides efficient access to one of a group of common packet channels in a cell of a spread spectrum wireless communication network. The base station broadcasts status information as to the availability and/or available data rates for each common packet channel (CPCH) or group of CPCH channels. Each mobile station uses the status information to select an available channel and/or a channel with sufficient data rate. The mobile station then starts transmission of a series of access pREAMbles, each of which contains a signature corresponding to the selected channel. The mobile station transmits the pREAMbles at increasing power levels. When the base station detects a pREAMble transmission, the base station responds with a corresponding acknowledgment. Upon receiving this acknowledgment, the mobile station preferably selects a collision detection (CD) signature and transmits a CD pREAMble containing that signature. If the base station receives more than one CD pREAMble, it selects one and responds by sending back a corresponding CD acknowledgement. In response, the mobile station begins to send its packet data along with any closed-loop power control information over the selected CPCH channel. If the MS detects a loss of the downlink channel, the MS halts its CPCH uplink transmission. Also, during a transmission of data, the mobile station that has successfully obtained access can piggy-back data packets one after another so long as it has packets ready to send, up to a maximum limit set by the network.

29 Claims, 10 Drawing figures

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWIC	Drawn
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4. Document ID: US 6639936 B2

L7: Entry 4 of 11

File: USPT

Oct 28, 2003

US-PAT-NO: 6639936

DOCUMENT-IDENTIFIER: US 6639936 B2

h e b b g e e e f e g ef b e

TITLE: Pre-data power control common packet channel

DATE-ISSUED: October 28, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kanterakis; Emmanuel	North Brunswick	NJ		
<u>Parsha</u> ; Kourosh	Riverside	CT		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE	CODE
Golden Bridge Technology, Inc.	West Long Branch	NJ			02	

APPL-NO: 10/ 096312 [PALM]

DATE FILED: March 13, 2002

PARENT-CASE:

This application is a continuation of U.S. patent application Ser. No. 09/275,010 filed Mar. 24, 1999 entitled PRE-DATA POWER CONTROL COMMON PACKET CHANNEL, now U.S. Pat. No. 6,389,056; which is a continuation in part of U.S. patent application Ser. No. 09/273,508, filed Mar. 22, 1999, entitled COMMON PACKET CHANNEL, now U.S. Pat. No. 6,169,759.

INT-CL: [07] H04 B 1/69, H04 B 7/216

US-CL-ISSUED: 375/130; 375/141, 370/342

US-CL-CURRENT: 375/130; 370/342, 375/141

FIELD-OF-SEARCH: 375/130, 375/141, 375/140, 370/342, 370/347, 370/208, 370/209, 370/337, 370/335, 370/503, 370/506, 370/512, 370/514, 370/365, 370/366, 370/445, 370/374, 455/522, 455/422

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>5103459</u>	April 1992	Gilhousen et al.	
<u>5384777</u>	January 1995	Ahmadi et al.	.
<u>5461639</u>	October 1995	Wheatley, III et al.	
<u>5621723</u>	April 1997	Walton, Jr. et al.	
<u>5673259</u>	September 1997	Quick, Jr.	
<u>5802465</u>	September 1998	Hamalainen et al.	
<u>5825835</u>	October 1998	Kingston et al.	
<u>5841768</u>	November 1998	Ozluturk et al.	370/335
<u>5850602</u>	December 1998	Tisdale et al.	
<u>5875182</u>	February 1999	Hatzipapafotiou	
<u>5893036</u>	April 1999	Trandai et al.	
<u>5894472</u>	April 1999	de Seze	
<u>5933777</u>	August 1999	Rahman	
<u>5943327</u>	August 1999	Mademann	

<u>5953369</u>	September 1999	Suzuki	
<u>5982763</u>	November 1999	Sato	
<u>5991308</u>	November 1999	Fuhrmann et al.	
<u>6009089</u>	December 1999	Huang et al.	
<u>6011788</u>	January 2000	Hurst et al.	
<u>6026081</u>	February 2000	Hamabe	
<u>6028851</u>	February 2000	Persson et al.	
<u>6031832</u>	February 2000	Turina	
<u>6038223</u>	March 2000	Hansson et al.	
<u>6038250</u>	March 2000	Shou et al.	
<u>6115390</u>	September 2000	Chuah	
<u>6169759</u>	January 2001	Kanterakis et al.	375/130
<u>6178194</u>	January 2001	Vasic	375/136
<u>6301286</u>	October 2001	Kanterakis et al.	375/130
<u>6389056</u>	May 2002	Kanterakis et al.	375/130
<u>6480525</u>	November 2002	Parsa et al.	375/141
<u>6507601</u>	January 2003	Parsa et al.	375/141

ART-UNIT: 2631

PRIMARY-EXAMINER: Bocure; Tesfaldet

ATTY-AGENT-FIRM: McDermott, Will & Emery

ABSTRACT:

A base station (BS) and a plurality of remote stations in a code-division-multiple access (CDMA) system employ spread-spectrum communication. The base station has a BS-spread-spectrum transmitter and a BS-spread-spectrum receiver. A remote station has an RS-spread-spectrum transmitter and an RS-spread-spectrum receiver. The BS transmitter transmits a broadcast common-synchronization channel, which includes a frame-timing signal. The broadcast common-synchronization channel uses a common chip-sequence signal. An RS-spread-spectrum receiver receives the broadcast common-synchronization channel, and the RS determines frame timing from the frame-timing signal. In response, the associated RS-spread-spectrum transmitter transmits an access burst signal, including RS-preamble signals, RS-power-control signals, and RS-pilot signals, respectively, transmitted in time, at increasing power levels. The BS-spread-spectrum transmitter, responsive to the BS-spread-spectrum receiver receiving the access-burst signal, and detecting an RS-preamble signal, transmits an acknowledgment signal. In response to the first RS-spread-spectrum receiver receiving the acknowledgment signal, the first RS-spread-spectrum transmitter transmits a spread-spectrum signal having data.

19 Claims, 12 Drawing figures

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Claims](#) | [KINIC](#) | [Drawn](#)

5. Document ID: **US 6606341 B1**

L7: Entry 5 of 11

File: USPT

Aug 12, 2003

US-PAT-NO: 6606341

DOCUMENT-IDENTIFIER: US 6606341 B1

TITLE: Common packet channel with firm handoff

DATE-ISSUED: August 12, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kanterakis; Emmanuel	North Brunswick	NJ		
<u>Parsha</u> ; Kourosh	Riverside	CT		

## ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE	CODE
Golden Bridge Technology, Inc.	West Long Branch	NJ			02	

APPL-NO: 09/ 304345 [PALM]

DATE FILED: May 4, 1999

## PARENT-CASE:

CROSS REFERENCE TO RELATED APPLICATION This application is a continuation in part of U.S. patent application Ser. No. 09/273,508, filed Mar. 22, 1999, entitled COMMON PACKET CHANNEL, now issued as U.S. Pat. No. 6,169,759 on Jan. 2, 2001 and a continuation in part of U.S. patent application Ser. No. 09/275,010, filed Mar. 24, 1999, entitled PRE-DATA POWER CONTROL COMMON PACKET CHANNEL, now issued as U.S. Pat. No. 6,389,056 on May 14, 2002.

INT-CL: [07] H04 B 1/69, H04 B 7/216

US-CL-ISSUED: 375/130; 375/141, 370/342

US-CL-CURRENT: 375/130; 370/342, 375/141

FIELD-OF-SEARCH: 375/140, 375/141, 375/130, 375/146, 375/147, 370/394, 370/342, 370/335, 370/320, 370/441, 370/445, 370/446, 370/447, 370/448, 455/436, 455/437, 455/439-444, 455/509

## PRIOR-ART-DISCLOSED:

## U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>4689786</u>	August 1987	Sidhu et al.	
<u>5103459</u>	April 1992	Gilhousen et al.	
<u>5280472</u>	January 1994	Gilhousen et al.	
<u>5295140</u>	March 1994	Crisler et al.	
<u>5305308</u>	April 1994	English et al.	
<u>5329550</u>	July 1994	Rousseau et al.	
<u>5384777</u>	January 1995	Ahmadi et al.	
<u>5461639</u>	October 1995	Wheatley, III et al.	
<u>5491837</u>	February 1996	Haartsen	
<u>5535210</u>	July 1996	Smolinske et al.	

<u>5537397</u>	July 1996	Abramson
<u>5544196</u>	August 1996	Tiedemann, Jr. et al.
<u>5581707</u>	December 1996	Kuecken
<u>5600754</u>	February 1997	Gardner et al.
<u>5621723</u>	April 1997	Walton, Jr. et al.
<u>5671218</u>	September 1997	I et al.
<u>5673259</u>	September 1997	Quick, Jr.
<u>5729542</u>	March 1998	Dupont
<u>5802046</u>	September 1998	Scott
<u>5802465</u>	September 1998	Hamalainen et al.
<u>5809430</u>	September 1998	D'Amico
<u>5825835</u>	October 1998	Kingston et al.
<u>5841768</u>	November 1998	Ozluturk et al.
<u>5850602</u>	December 1998	Tisdale et al.
<u>5875182</u>	February 1999	Hatzipapafotiou
<u>5893036</u>	April 1999	Trandai et al.
<u>5894472</u>	April 1999	de Seze
<u>5933777</u>	August 1999	Rahman
<u>5943327</u>	August 1999	Mademann
<u>5953369</u>	September 1999	Suzuki
<u>5982763</u>	November 1999	Sato
<u>5991308</u>	November 1999	Fuhrmann et al.
<u>6009089</u>	December 1999	Huang et al.
<u>6011788</u>	January 2000	Hurst et al.
<u>6026081</u>	February 2000	Hamabe
<u>6028851</u>	February 2000	Persson et al.
<u>6031832</u>	February 2000	Turina
<u>6038223</u>	March 2000	Hansson et al.
<u>6038250</u>	March 2000	Shou et al.
<u>6091757</u>	July 2000	Cudak et al.
<u>6115390</u>	September 2000	Chuah
<u>6141337</u>	October 2000	Uta et al.
<u>6141373</u>	October 2000	Scott
<u>6144841</u>	November 2000	Feeney
<u>6163533</u>	December 2000	Esmailzadeh et al.
<u>6163708</u>	December 2000	Groe
<u>6169759</u>	January 2001	Kanterakis et al.
<u>6256301</u>	July 2001	Tiedemann, Jr. et al.
<u>6292471</u>	September 2001	Cao et al.
<u>6301286</u>	October 2001	Kanterakis et al.
<u>6310868</u>	October 2001	Uebayashi et al.
<u>6366779</u>	April 2002	Bender et al.
<u>6389056</u>	May 2002	Kanterakis et al.
<u>6442153</u>	August 2002	Dahlman et al.
<u>6480525</u>	November 2002	Parsa et al.
<u>6507601</u>	January 2003	Parsa et al.

## FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
0731578	September 1996	EP	
0773636	May 1997	EP	
2318256	April 1998	GB	
WO93/18601	September 1993	WO	
WO97/29596	August 1997	WO	
WO00/03499	January 2000	WO	
WO00/08908	February 2000	WO	
WO00/18172	March 2000	WO	
WO00/22873	April 2000	WO	
WO00/57591	September 2000	WO	
WO00/57663	September 2000	WO	

## OTHER PUBLICATIONS

Dong In Kim et al., "Random Assignment/Transmitter Oriented Code Scheme for Centralized DS/SSMA Packet Radio Networks," IEEE Journal on Selected Area in Communication, vol. 14, No. 8, Oct. 1996, pp. 1560-1568.

Riaz Esmailzadel et al., "A New Slotted ALOHA Based Random Access Method for CDMA Systems," IEEE, ICUPC 1997, pp. 43-47.

"Start UMTS Services with 3G-GPRS:CPCH FACH," Golden Bridge Technology, Innovations and Technologies, pp. 1-20 (Jun. 27, 2000).

The Common Packet Channel Considered the 3rd Generation GPRS, System Engineering of Data Services in UMTS W-CDMA System, Galway, Ireland, Oct. 1-4, 2000.

Jongray Na, "Error Performance Analysis of Data Based Fast Channel Estimation for CDMA uplink with Staggered Burst Pilot," 1997, IEEE, pp. 2177-2181.

Dae-Ki Hong et al., "Pilot to data channel power allocation for PCA-DS/CDMA with interference canceler," 2001, IEEE, pp. 331-333.

Sofiene Affes et al., "Pilot assisted STAR for increasing capacity and coverage on the downlink of wideband CDMA networks," 2001, IEEE, pp. 310-313.

John S. Thompson et al., "Pilot power allocation for CDMA system with antenna arrays," 2000, IEEE, pp. 424-428.

U.S. patent application Ser. No. 09/273,450 filed Mar. 22, 1999.

U.S. patent application Ser. No. 09/941,756 filed Aug. 30, 2001.

ART-UNIT: 2631

PRIMARY-EXAMINER: Bocure; Tesfaldet

ATTY-AGENT-FIRM: McDermott, Will & Emery

ABSTRACT:

An improvement to a code-division-multiple-access (CDMA) system employing spread-spectrum modulation, with the CDMA system having a base station (BS) and a plurality of remote stations. The base station has a BS-spread-spectrum transmitter and a BS-spread-spectrum receiver. A remote station has an RS-spread-spectrum transmitter and an RS-spread-spectrum receiver. The BS transmitter transmits a broadcast common-synchronization channel, which includes a frame-timing signal. The broadcast common-synchronization channel has a common chip-sequence signal, which is common to the plurality of remote stations. In response to the RS-spread-spectrum receiver receiving the broadcast common-synchronization channel, and

determining frame timing from the frame-timing signal, an RS-spread-spectrum transmitter transmits an access-burst signal, which includes, RS-power-control signals, transmitted in time, at increasing power levels. The BS-spread-spectrum transmitter, responsive to the BS-spread-spectrum receiver receiving the access-burst signal, and detecting an RS-preamble signal, transmits an acknowledgment signal. In response to the first RS-spread-spectrum receiver receiving the acknowledgment signal, the first RS-spread-spectrum transmitter transmits a spread-spectrum signal having data. The BS-spread-spectrum transmitter transmits either data or power-control information to the RS-spread-spectrum receiver.

49 Claims, 18 Drawing figures

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Assignee](#) | [Attache](#) | [Claims](#) | [KNOC](#) | [Drawn](#)

6. Document ID: US 6574267 B1

L7: Entry 6 of 11

File: USPT

Jun 3, 2003

US-PAT-NO: 6574267

DOCUMENT-IDENTIFIER: US 6574267 B1

TITLE: Rach ramp-up acknowledgement

DATE-ISSUED: June 3, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kanterakis; Emmanuel	North Brunswick	NJ		
<u>Parsha</u> ; Kourosh	Riverside	CT		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE	CODE
Golden Bridge Technology, Inc.	West Long Branch	NJ				02

APPL-NO: 09/ 273450 [PALM]

DATE FILED: March 22, 1999

INT-CL: [07] H04 B 1/69, H04 B 7/216

US-CL-ISSUED: 375/141; 370/342

US-CL-CURRENT: 375/141; 370/342

FIELD-OF-SEARCH: 375/130, 375/141, 370/342, 370/335, 370/320, 370/321, 370/324, 370/441

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>5103459</u>	April 1992	Gilhousen	375/130
<u>5280472</u>	January 1994	Gilhousen et al.	

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<u>5305308</u>	April 1994	English et al.	
<u>5329550</u>	July 1994	Rousseau et al.	
<u>5384777</u>	January 1995	Ahmadi et al.	
<u>5461639</u>	October 1995	Wheatley, III et al.	
<u>5537397</u>	July 1996	Abramson	
<u>5544196</u>	August 1996	Tiedermann, Jr. et al.	
<u>5673259</u>	September 1997	Quick, Jr.	
<u>5802465</u>	September 1998	Hamalainen et al.	
<u>5825835</u>	October 1998	Kingston et al.	
<u>5841768</u>	November 1998	Ozluturk et al.	
<u>5850602</u>	December 1998	Tisdale et al.	
<u>5875182</u>	February 1999	Hatzipapafotiou	
<u>5893036</u>	April 1999	Trandai et al.	
<u>5894472</u>	April 1999	de Seze	
<u>5933777</u>	August 1999	Rahman	
<u>5943327</u>	August 1999	Mademann	
<u>5953369</u>	September 1999	Suzuki	
<u>5982763</u>	November 1999	Sato	
<u>5991308</u>	November 1999	Fuhrmann et al.	
<u>6009089</u>	December 1999	Huang et al.	
<u>6011788</u>	January 2000	Hurst et al.	
<u>6026081</u>	February 2000	Hamabe	
<u>6031832</u>	February 2000	Turina	
<u>6038223</u>	March 2000	Hansson et al.	
<u>6038250</u>	March 2000	Shou et al.	
<u>6091757</u>	July 2000	Cudak et al.	
<u>6141337</u>	October 2000	Uta et al.	
<u>6141373</u>	October 2000	Scott	
<u>6144841</u>	November 2000	Feeny	
<u>6163533</u>	December 2000	Esmailzadeh et al.	370/342
<u>6169759</u>	January 2001	Kanterakis et al.	
<u>6256301</u>	June 2001	Gilleo et al.	
<u>6301286</u>	October 2001	Kanterakis et al.	

## FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
2 318 256	April 1998	GB	
WO 97/29596	August 1997	WO	

## OTHER PUBLICATIONS

Dong In Kim et al., "Random Assignment/Transmitter Oriented Code Scheme for Centralized DS/SSMA Packet Radio Networks," IEEE Journal on Selected Area in Communication, vol. 14, No. 8, Oct. 1996, pp. 1560-1568.

Riaz Esmailzadeh et al. "A New Slotted ALOHA Based Random Access Method for CDMA Systems," IEEE, ICUPC 1997, pp. 43-47.

ART-UNIT: 2631

PRIMARY-EXAMINER: Bocure; Tesfaldet

ATTY-AGENT-FIRM: McDermott, Will & Emery

ABSTRACT:

An improvement to a code-division-multiple-access (CDMA) system employing spread-spectrum modulation, with the CDMA system having a base station (BS) with a BS-spread-spectrum transmitter and a BS-spread-spectrum receiver, and a plurality of remote stations. Each remote station (RS) has an RS-spread-spectrum transmitter and an RS-spread-spectrum receiver. The improvement includes the steps of transmitting from the BS-spread-spectrum transmitter, a broadcast common-synchronization channel. The broadcast common-synchronization channel has a common chip-sequence signal common to the plurality of remote stations, and a frame-timing signal. The improvement includes receiving at a first RS-spread-spectrum receiver the broadcast common-synchronization channel, and determining frame timing from the frame-timing signal, and transmitting from a first RS-spread-spectrum transmitter an access-burst signal. The access-burst signal has a plurality of segments, which have a plurality of power levels. At the BS-spread-spectrum receiver the access-burst signal is received at a detected-power level. In response to receiving the access-burst signal, the BS-spread-spectrum transmitter transmits to the first RS-spread-spectrum receiver an acknowledgment signal. The first RS-spread-spectrum receiver receives the acknowledgment signal, and in response to receiving the acknowledgment signal, the first RS-spread-spectrum transmitter transmits to the BS-spread-spectrum receiver, a spread-spectrum signal having data.

29 Claims, 13 Drawing figures

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Search](#) | [Searched](#) | [Claims](#) | [KINIC](#) | [Drawn](#)

7. Document ID: US 6507601 B2

L7: Entry 7 of 11

File: USPT

Jan 14, 2003

US-PAT-NO: 6507601

DOCUMENT-IDENTIFIER: US 6507601 B2

TITLE: Collision avoidance

DATE-ISSUED: January 14, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
<u>Parsa</u> ; Kourosh	Riverside	CT		
Kanterakis; Emmanuel	North Brunswick	NJ		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE	CODE
Golden Bridge Technology	West Long Branch	NJ				02

APPL-NO: 09/ 778955 [PALM]

DATE FILED: February 8, 2001

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## PARENT-CASE:

RELATED APPLICATION This application claims the benefit of U.S. Provisional Application No. 60/181,200, entitled "CHANNEL ASSIGNMENT AND UE CHANNEL SELECTION METHOD" filed on Feb. 9, 2000, the disclosure of which is entirely incorporated herein by reference.

INT-CL: [07] H04 B 1/69, H04 B 7/216

US-CL-ISSUED: 375/141; 370/441

US-CL-CURRENT: 375/141; 370/441

FIELD-OF-SEARCH: 375/130, 375/141, 375/146, 375/147, 370/441, 370/433, 370/342, 370/335, 370/461, 370/445, 370/448, 455/450, 455/455

## PRIOR-ART-DISCLOSED:

## U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>5581707</u>	December 1996	Kuecken	707/233
<u>5636123</u>	June 1997	Rich et al.	701/207
<u>5673259</u>	September 1997	Quick, Jr.	370/340
<u>5802046</u>	September 1998	Scott	370/280
<u>5841768</u>	November 1998	Ozluturk et al.	370/335
<u>6163533</u>	December 2000	Esmailzadeh et al.	370/342
<u>6169759</u>	January 2001	Kanterakis et al.	375/130
<u>6256301</u>	July 2001	Tiedemann, Jr. et al.	370/342
<u>6366779</u>	April 2002	Bender et al.	455/450

## FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
03499	January 2000	WO	
08908	February 2000	WO	
57663	September 2000	WO	

## OTHER PUBLICATIONS

"Start UMTS Services With 3G-GPRS:CPCH/FACH," Golden Bridge Technology, Innovations and Technologies, Jun. 27, 2000. PP 1-20.

Kourosh Parsa, Saeed S. Ghassemzadeh, and Saied Kazeminejad, "The Common Packet Channel Considered the 3.sup.rd Generation GPRS," System Engineering of Data Services in UMTS W-CMDA Systems, IST Mobile Communications Summit, Galway, Ireland, Oct. 1-4, 2000.

ART-UNIT: 2631

PRIMARY-EXAMINER: Bocure; Tesfaldet

ATTY-AGENT-FIRM: McDermott, Will & Emery

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## ABSTRACT:

A code-division-multiple-access (CDMA) system provides a collision avoidance mechanism for packet communications. When mobile stations attempt to establish links with a base station, the base station selects one mobile station to transmit data over an intended uplink channel. The base station transmits a predetermined sequence, during the first frame of the data transmission over the downlink control channel that corresponds to the intended uplink channel. If several mobile stations detect or mis-perceive successful access attempts, those stations begin data transmissions via respective desired uplink channels. At the same time, the mobile stations listen for the known sequence over the various corresponding downlink channels. Upon successful detection of the known sequence, one mobile station continues transmission of its data over the intended channel. However, any contending mobile station that does not detect the known sequence on the appropriate downlink channel immediately stops its data transmission.

20 Claims, 8 Drawing figures

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Edit](#) | [Print](#) | [Help](#) | [Logout](#) | [Claims](#) | [KMM](#) | [Drawn D](#)

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8. Document ID: US 6480525 B1

L7: Entry 8 of 11

File: USPT

Nov 12, 2002

US-PAT-NO: 6480525

DOCUMENT-IDENTIFIER: US 6480525 B1

TITLE: Second level collision resolution for packet data communications

DATE-ISSUED: November 12, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
<u>Parسا</u> ; Kourosh	Riverside	CT		
Kanterakis; Emmanuel	North Brunswick	NJ		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE	CODE
Golden Bridge Technology Inc.	West Long Branch	NJ			02	

APPL-NO: 09/ 722688 [PALM]

DATE FILED: November 28, 2000

PARENT-CASE:

RELATED APPLICATION This application claims the benefit of U.S. Provisional Application No. 60/167,852, entitled "CLOSED LOOP POWER CONTROL OF THE FORWARD ACCESS CHANNEL (FACH), DOWNLINK COMMON PACKET CHANNEL VIA UPLINK CPCH" filed on Nov. 29, 1999, the disclosure of which is entirely incorporated herein by reference.

INT-CL: [07] H04 K 1/00, H04 B 7/216

US-CL-ISSUED: 375/141; 370/342, 370/441

US-CL-CURRENT: 375/141; 370/342, 370/441

FIELD-OF-SEARCH: 375/130, 375/140, 375/141, 375/146, 375/147, 370/320, 370/335, 370/342, 370/441, 370/445, 370/447

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>5103459</u>	April 1992	Gilhousen et al.	
<u>5280472</u>	January 1994	Gilhousen et al.	
<u>5295140</u>	March 1994	Crisler et al.	
<u>5384777</u>	January 1995	Ahmadi et al.	
<u>5461639</u>	October 1995	Wheatley, III et al.	
<u>5537397</u>	July 1996	Abramson	
<u>5544196</u>	August 1996	Tiedemann, Jr. et al.	
<u>5671218</u>	September 1997	I et al.	
<u>5673259</u>	September 1997	Quick, Jr.	
<u>5729542</u>	March 1998	Dupont	
<u>5802465</u>	September 1998	Hamalainen et al.	
<u>5825835</u>	October 1998	Kingston et al.	
<u>5850602</u>	December 1998	Tisdale et al.	
<u>5875182</u>	February 1999	Hatzipapafotiou	
<u>5893036</u>	April 1999	Trandai et al.	
<u>5894472</u>	April 1999	de Seze	
<u>5933777</u>	August 1999	Rahman	
<u>5943327</u>	August 1999	Mademann	
<u>5953369</u>	September 1999	Suzuki	
<u>5982763</u>	November 1999	Sato	
<u>5991308</u>	November 1999	Fuhrmann et al.	
<u>6009089</u>	December 1999	Huang et al.	
<u>6011788</u>	January 2000	Hurst et al.	
<u>6026081</u>	February 2000	Hamabe	
<u>6031832</u>	February 2000	Turina	
<u>6038223</u>	March 2000	Hansson et al.	
<u>6038250</u>	March 2000	Shou et al.	
<u>6115390</u>	September 2000	Chuah	
<u>6163533</u>	December 2000	Esmailzadeh et al.	
<u>6163708</u>	December 2000	Groe	
<u>6169759</u>	January 2001	Kanterakis et al.	

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
003499	January 2000	WO	
008908	February 2000	WO	
018172	March 2000	WO	

022873	April 2000	WO
057591	September 2000	WO
057663	September 2000	WO

## OTHER PUBLICATIONS

"Start UMTS Services with 3G-GPRS:CPCH FACH," Golden Bridge Technology, Innovations and Technologies, pp. 1-20 (Jun. 27, 2000).

The Common Packet Channel considered the 3.sup.rd Generation GPRS, System Engineering of Data Services in UMTS W-CDMA Systems, Galway, Ireland, Oct. 1-4, 2000.

"Smart UMTS Services with 3G-GPRS:CPCH/FACH", Golden Bridge Technology, pp. 1-20.

"The Common Packet Channel Considered the 3rd Generation GPRS", by K. Parsa et al., Oct. 2000, pp.

ART-UNIT: 2663

PRIMARY-EXAMINER: Bocure; Tesfalbet

ATTY-AGENT-FIRM: McDermott, Will & Emery

## ABSTRACT:

In a code-division-multiple-access (CDMA) system employing spread-spectrum modulation, mobile stations initially seek access to a selected one of two or more groups of common packet channels (CPCHs) serviced through a base station. A second order collision resolution phase, conducted between the base stations and contending mobile stations, serves to allocate one or more available channels from the selected group of channels among the contending mobile stations. In the collision resolution phase, each mobile station randomly selects a collision detection (CD) signature and sends that signature in a CD preamble. For each available channel in the group, the base station assigns one of the mobile stations. For each assigned mobile station, the base station transmits a CD acknowledgement that corresponds to the CD preamble of the assigned mobile station and identifies the available channel assigned to that mobile station.

28 Claims, 11 Drawing figures

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Search](#) | [Print](#) | [Download](#) | [Claims](#) | [KOMC](#) | [Drawings](#)

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9. Document ID: US 6389056 B1

L7: Entry 9 of 11

File: USPT

May 14, 2002

US-PAT-NO: 6389056

DOCUMENT-IDENTIFIER: US 6389056 B1

TITLE: Pre-data power control common packet channel

DATE-ISSUED: May 14, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kanterakis; Emmanuel	North Brunswick	NJ		

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Parsha; Kourosh

Riverside

CT

## ASSIGNEE-INFORMATION:

NAME	CITY	STATE ZIP	CODE COUNTRY	TYPE	CODE
Golden Bridge Technology, Inc.	West Long Branch NJ			02	

APPL-NO: 09/ 275010 [PALM]

DATE FILED: March 24, 1999

## PARENT-CASE:

CROSS REFERENCE TO RELATED APPLICATION This application is a continuation in part of U.S. patent application Ser. No. 09/273,508, filed Mar. 22, 1999, entitled COMMON PACKET CHANNEL.

INT-CL: [07] H04 K 1/00

US-CL-ISSUED: 375/130; 375/141, 370/342

US-CL-CURRENT: 375/130; 370/342, 375/141

FIELD-OF-SEARCH: 375/130, 375/141, 375/146, 375/147, 375/356, 370/342, 370/347, 370/445, 455/422, 455/522

## PRIOR-ART-DISCLOSED:

## U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>5103459</u>	April 1992	Gilhousen et al.	375/130
<u>5384777</u>	January 1995	Ahmadi et al.	370/337
<u>5461639</u>	October 1995	Wheatley, III et al.	370/342
<u>5621723</u>	April 1997	Walton, Jr. et al.	375/130
<u>5673259</u>	September 1997	Quick, Jr.	370/342
<u>5802465</u>	September 1998	Hamalainen et al.	455/403
<u>5825835</u>	October 1998	Kingston et al.	370/367
<u>5850602</u>	December 1998	Tisdale et al.	455/430
<u>5875182</u>	February 1999	Hatzipapafotiou	370/321
<u>5893036</u>	April 1999	Trandai et al.	370/522
<u>5894472</u>	April 1999	de Seze	370/337
<u>5933777</u>	August 1999	Rahman	455/450
<u>5943327</u>	August 1999	Mademann	455/450
<u>5953369</u>	September 1999	Suzuki	375/148
<u>5982763</u>	November 1999	Sato	370/342
<u>5991308</u>	November 1999	Fuhrmann et al.	370/395.53
<u>6009089</u>	December 1999	Huang et al.	370/342
<u>6026081</u>	February 2000	Hamabe	370/342
<u>6028851</u>	February 2000	Persson et al.	370/335
<u>6031832</u>	February 2000	Turina	370/348
<u>6038223</u>	March 2000	Hansson et al.	370/329
<u>6038250</u>	March 2000	Shou et al.	375/143
<u>6011788</u>	April 2000	Hurst et al.	370/335

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<u>6115390</u>	September 2000	Chuah	370/443
<u>6163553</u>	December 2000	Esmailzadeh et al.	370/342

ART-UNIT: 2631

PRIMARY-EXAMINER: Bocure; Tesfaldet

ATTY-AGENT-FIRM: McDermott, Will & Emery

ABSTRACT:

An improvement to a code-division-multiple-access (CDMA) system employing spread-spectrum modulation, with the CDMA system having a base station (BS) and a plurality of remote stations. The base station has a BS-spread-spectrum transmitter and a BS-spread-spectrum receiver. A remote station has an RS-spread-spectrum transmitter and an RS-spread-spectrum receiver. The BS transmitter transmits a broadcast common-synchronization channel, which includes a frame-timing signal. The broadcast common-synchronization channel has a common chip-sequence signal, which is common to the plurality of remote stations. In response to the RS-spread-spectrum receiver receiving the broadcast common-synchronization channel, and determining frame timing from the frame-timing signal, an RS-spread-spectrum transmitter transmits an access burst signal, which includes a plurality of RS-preamble signals, RS-power-control signals, and RS-pilot signals, respectively, transmitted in time, at increasing power levels. The BS-spread-spectrum transmitter, responsive to the BS-spread-spectrum receiver receiving the access-burst signal, and detecting an RS-preamble signal, transmits an acknowledgment signal. In response to the first RS-spread-spectrum receiver receiving the acknowledgment signal, the first RS-spread-spectrum transmitter transmits a spread-spectrum signal having data.

26 Claims, 12 Drawing figures

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Image](#) | [Text](#) | [Claims](#) | [KIMC](#) | [Drawings](#)

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10. Document ID: US 6301286 B1

L7: Entry 10 of 11

File: USPT

Oct 9, 2001

US-PAT-NO: 6301286

DOCUMENT-IDENTIFIER: US 6301286 B1

\*\* See image for Certificate of Correction \*\*

TITLE: Common packet channel

DATE-ISSUED: October 9, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kanterakis; Emmanuel	North Brunswick	NJ		
<u>Parsha</u> ; Kourosh	Riverside	CT		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE ZIP CODE	COUNTRY	TYPE CODE
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Golden Bridge Technology, Inc. West Long Beach NJ

02

APPL-NO: 09/ 679367 [PALM]  
DATE FILED: October 5, 2000

## PARENT-CASE:

CROSS-REFERENCE TO RELATED APPLICATION This application is a continuation of U.S. patent application Ser. No. 09/273,508, filed Mar. 22, 1999, now U.S. Pat. No. 6,169,759, issued Jan. 2, 2001, entitled "COMMON PACKET CHANNEL," the disclosure of which is incorporated herein entirely by reference.

INT-CL: [07] H04 K 1/00

US-CL-ISSUED: 375/130; 375/131, 370/342, 370/347

US-CL-CURRENT: 375/130; 370/342, 370/347, 375/131

FIELD-OF-SEARCH: 375/130, 375/131, 375/140, 375/141, 370/342, 370/347, 370/208, 370/209, 370/337, 370/335, 370/503, 370/506, 370/512, 370/514, 370/365, 370/366

## PRIOR-ART-DISCLOSED:

## U. S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>5103459</u>	April 1992	Gilhousen et al.	375/309
<u>5280472</u>	January 1994	Gilhousen et al.	370/208
<u>5305308</u>	April 1994	English et al.	370/335
<u>5329550</u>	July 1994	Rousseau et al.	375/219
<u>5384777</u>	January 1995	Ahmadi et al.	370/503
<u>5461639</u>	October 1995	Wheatley, III et al.	370/342
<u>5537397</u>	July 1996	Abramson	375/130
<u>5544196</u>	August 1996	Tiedemann, Jr. et al.	375/150
<u>5600754</u>	February 1997	Gardner et al.	704/235
<u>5673259</u>	September 1997	Quick, Jr.	340/342
<u>5802465</u>	September 1998	Hamalainen et al.	455/403
<u>5825835</u>	October 1998	Kingston et al.	375/367
<u>5850602</u>	December 1998	Tisdale et al.	455/430
<u>5875182</u>	February 1999	Hatzipapafotiou	370/321
<u>5893036</u>	April 1999	Trandai et al.	455/522
<u>5894472</u>	April 1999	de Seze	370/337
<u>5933777</u>	August 1999	Rahman	455/450
<u>5943327</u>	August 1999	Mademann	370/329
<u>5953369</u>	September 1999	Suzuki	375/346
<u>5982763</u>	November 1999	Sato	370/342
<u>5991308</u>	November 1999	Fuhrmann et al.	370/474
<u>6009089</u>	December 1999	Huang et al.	370/342
<u>6011788</u>	April 2000	Hurst et al.	370/335
<u>6026081</u>	February 2000	Hamabe	370/335
<u>6031832</u>	February 2000	Turina	340/348
<u>6038223</u>	March 2000	Hansson et al.	370/329

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<u>6038250</u>	March 2000	Shou et al.	370/335
<u>6091757</u>	July 2000	Cudak et al.	375/130
<u>6141337</u>	October 2000	Uta et al.	370/350
<u>6141373</u>	October 2000	Scott	375/150
<u>6144841</u>	November 2000	Feeny	455/69
<u>6169759</u>	January 2001	Kanterakis et al.	375/130

## OTHER PUBLICATIONS

Dong In Kim et al., "Random Assignment/Transmitter Oriented COde Scheme for Centralized DS/SSMA Packet Radio Networks," IEEE Journal on Selected Area in Communication, vol. 14, No. 8, Oct. 1996, pp. 1560-1568.\*

Riaz Esmailzadeh, "A New Slotted Aloha Based Random Access Method For CDMA Systems," IEEE, 1997, pp. 43-47.

ART-UNIT: 261

PRIMARY-EXAMINER: Bocure; Tesfaldet

ATTY-AGENT-FIRM: McDermott, Will & Emery

## ABSTRACT:

An improvement to a code-division-multiple-access (CDMA) system employing spread-spectrum modulation, with the CDMA system having a base station (BS) and a plurality of remote stations. The base station has a BS-spread-spectrum transmitter and a BS-spread-spectrum receiver. A remote station has an RS-spread-spectrum transmitter and an RS-spread-spectrum receiver. The BS transmitter transmits a broadcast common-synchronization channel, which includes a frame-timing signal. The broadcast common-synchronization channel has a common chip-sequence signal, which is common to the plurality of remote stations. In response to the RS-spread-spectrum receiver receiving the broadcast common-synchronization channel, and determining frame timing from the frame-timing signal, an RS-spread-spectrum transmitter transmits an access-burst signal. The BS-spread-spectrum transmitter, responsive to the BS-spread-spectrum receiver receiving the access-burst signal, transmits an acknowledgment signal. In response to the first RS-spread-spectrum receiver receiving the acknowledgment signal, the first RS-spread-spectrum transmitter transmits a spread-spectrum signal having data.

16 Claims, 11 Drawing figures

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWIC	Drawn D
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US-PAT-NO: 6169759

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\*\* See image for Certificate of Correction \*\*

TITLE: Common packet channel

DATE-ISSUED: January 2, 2001

h e b b g e e e f e g e f b e

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kanterakis; Emmanuel	North Brunswick	NJ		
<u>Parسا; Kourosh</u>	Riverside	CT		

## ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Golden Bridge Technology	West Long Branch	NJ			02

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## PRIOR-ART-DISCLOSED:

## U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>5103459</u>	April 1992	Gilhousen et al.	370/208
<u>5280472</u>	January 1994	Gilhousen et al.	370/208
<u>5384777</u>	January 1995	Ahmadi et al.	370/503
<u>5461639</u>	October 1995	Wheatley, III et al.	370/342
<u>5537397</u>	July 1996	Abramson	375/130
<u>5544196</u>	August 1996	Tiedemann, Jr. et al.	375/150
<u>5673259</u>	September 1997	Quick, Jr.	370/342
<u>5802465</u>	September 1998	Hamalainen et al.	455/403
<u>5825835</u>	October 1998	Kingston et al.	375/367
<u>5850602</u>	December 1998	Tisdale et al.	455/430
<u>5875182</u>	February 1999	Hatzipapafotiou	370/321
<u>5893036</u>	April 1999	Trandai et al.	455/522
<u>5894472</u>	April 1999	de Seze	370/337
<u>5933777</u>	August 1999	Rahman	455/450
<u>5943327</u>	August 1999	Mademann	370/329
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<u>5982763</u>	November 1999	Sato	370/342
<u>5991308</u>	November 1999	Fuhrmann et al.	370/474
<u>6009089</u>	December 1999	Huang et al.	370/342
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<u>6031832</u>	February 2000	Turina	370/348
<u>6038223</u>	March 2000	Hansson et al.	370/329
<u>6038250</u>	March 2000	Shou et al.	370/335

ART-UNIT: 271

PRIMARY-EXAMINER: Bocure; Tesfaldet

ATTY-AGENT-FIRM: McDermott, Will & Emery

ABSTRACT:

An improvement to a code-division-multiple-access (CDMA) system employing spread-spectrum modulation, with the CDMA system having a base station (BS) and a plurality of remote stations. The base station has a BS-spread-spectrum transmitter and a BS-spread-spectrum receiver. A remote station has an RS-spread-spectrum transmitter and an RS-spread-spectrum receiver. The BS transmitter transmits a broadcast common-synchronization channel, which includes a frame-timing signal. The broadcast common-synchronization channel has a common chip-sequence signal, which is common to the plurality of remote stations. In response to the RS-spread-spectrum receiver receiving the broadcast common-synchronization channel, and determining frame timing from the frame-timing signal, an RS-spread-spectrum transmitter transmits an access-burst signal. The BS-spread-spectrum transmitter, responsive to the BS-spread-spectrum receiver receiving the access-burst signal, transmits an acknowledgment signal. In response to the first RS-spread-spectrum receiver receiving the acknowledgment signal, the first RS-spread-spectrum transmitter transmits a spread-spectrum signal having data.

58 Claims, 11 Drawing figures

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